

## PCT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 13 November 2000 (13.11.00)	<b>Applicant's or agent's file reference</b> D.BHATOOLAUL 7 -
<b>International application No.</b> PCT/GB99/04180	<b>Priority date (day/month/year)</b> 18 March 1999 (18.03.99)
<b>International filing date (day/month/year)</b> 10 December 1999 (10.12.99)	
<b>Applicant</b> BHATOOLAUL, David, Lahiri et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 16 September 2000 (16.09.00)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b> Olivia TEFY Telephone No.: (41-22) 338.83.38
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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference D. BHATOOLAUL 7-20-6	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/04180	International filing date (day/month/year) 10/12/1999	Priority date (day/month/year) 18/03/1999
International Patent Classification (IPC) or national classification and IPC H04Q7/38		
Applicant LUCENT TECHNOLOGIES INC. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
  - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  16/09/2000	Date of completion of this report  08.06.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Schweitzer, J-C  Telephone No. +49 89 2399 8963  

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/04180

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

### Description, pages:

2-5 as originally filed

1,1a,6 as received on 13/03/2001 with letter of 09/03/2001

### Claims, No.:

1-5 as originally filed

### Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB99/04180

- ☐ the description,      pages:  
☐ the claims,      Nos.:  
☐ the drawings,      sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims	1 - 5
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1 - 5
Industrial applicability (IA)	Yes:	Claims	1 - 5
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**Concerning section V.2 (reasoned statement under Article 35(2) PCT)**

With respect to the subject-matter defined in the preamble of present **claim 1**, the cited prior art reference **D1 = WO-A-98/18280 (Ericsson)**, which is considered to represent the nearest prior art, already discloses a radio mobile communication system comprising a base station arranged to manage a plurality of mobile stations within at least one cell, and wherein an acknowledgment channel ("acquisition indication channel") is used by which the base station sends an acknowledgment signal to indicate that the strength of the preamble signals sent by the mobile stations (during call setup and using the preamble power ramping technique) has reached an acceptable signal, see **D1**, 2, lines 15 to 18 and page 9, lines 12 and 13, it being clear that the expressions "correct reception" or "correctly received" imply that at least the power level of the received (access request) signal is sufficiently high to permit proper detection of the signal.

Starting from said prior art system, which in addition is well-known from the I-95 or UMTS standards, the claimed system is characterized in that the acquisition/ acknowledgment signal "is arranged to indicate in addition that the mobile must not immediately send a message signal". This concept of inhibiting and/or delaying for a given time period the transmission of the message signal is however also to be found in citation **D1**, see page 9, lines 13 and 14, wherein it is indicated that *"the base station sends an acknowledgment message to the mobile station, and schedules the user's call to proceed if appropriate resources are available"*. Thus, as in the alleged invention, in **D1** the base station, upon reception of a "correct" preamble signal, can indicate to the mobile station that the message signal should not be send immediately but should be send out at a scheduled time.

Contrary to the applicant's opinion it is considered that although no "time out" is explicitly mentioned in **D1**, the term "*schedules*" used in **D1** can not simply be understood as "arranges" or "organises" but actually implies a time element or time component and should, therefore, in the context of **D1** be interpreted as "arranges the user's call to proceed at a scheduled time". This interpretation is also supported by the passage at lines 17 to 19 on page 9, wherein reference is made to a "*scheduling timeframe*".

In addition, it is to be noted that although **D1** does not explicitly mention the provision of an "acquisition indication channel", it would be obvious that the acknowledgment channel used therein actually corresponds to the claimed "acquisition

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB99/04180

indication channel" for sending acquisition signals to the mobile station.

For the above reasons, claim 1 is considered to lack the required inventive step, Article 33(3) PCT.

Independent **claim 4** is drafted in structural terms rather than in terms of method steps and corresponds essentially to claim 1, with the additional "power ramping feature", which as noted above is also known from **D1**, see page 3, lines 10 to 13. Hence the arguments concerning lack of inventive step set out above apply mutatis mutandis equally to said claim 4.

The dependent claims 2 to 3 and 5 appear to add nothing of inventive significance to claims 1 and 4, respectively, as the additional features introduced by said dependent claims refer only to minor implementing details concerning the fact that the message signal must not be send immediately but after a predetermined time lag. To the skilled person, it would however be clear that the expression "*scheduling the user's call*" also includes the indication of such a time delay after which the mobile station is allowed to transmit its message. Thus, the features set out in the dependent claims fall within the common knowledge and technical competence of a skilled person and add nothing of inventive significance to claims 1 and 4.

## IMPROVED MESSAGE ACCESS FOR RADIO TELECOMMUNICATIONS SYSTEM

5 This invention relates to an improved message access arrangement for a radio telecommunications system such as Universal Mobile Telecommunications System (UMTS) and relates especially to message acquisition indications.

To make a connection to the UMTS system, in known arrangements a mobile telephone sends its preamble at a first power, and waits for an acquisition indication on  
10 the Acquisition Indication Channel (AICH); if no indication is received, the preamble is resent at increased power, in steps, until an indication is received on the AICH. The message is then sent and if no positive acknowledgement is received via the Forward Access Channel (FACH), the message is assumed to be corrupted and it is resent.

A problem with this arrangement is that the base transceiver station must  
15 always have a sufficient level of hardware redundancy to ensure that the message parts of all detected preambles can be processed. This adds a high cost to the base transceiver station, and limits the number of access slots and preamble signatures allowed for each base transceiver station to achieve a given message throughput.

It is the object of the invention to provide a system which has a reduced  
20 requirement for hardware redundancy.

According to the invention a radio mobile telecommunications system comprises a base transceiver station arranged to manage a plurality of mobile systems within at least one telecommunications cell; the base station having means to provide an acquisition indication channel by which an acknowledgement signal is sent to  
25 indicate that the strength of a preamble signal sent by that mobile system to the base transceiver station has reached a predetermined level; characterised in that said acknowledgement signal is arranged to indicate in addition that the mobile system must not immediately send a message signal.

In the accompanying drawings, the prior art is illustrated in figures 1 – 7 in  
30 which:-

Figure 1 is a schematic diagram of a part of a radio telecommunications system;

Figure 2 illustrates a physical random access channel slots structure;

Figure 3 illustrates the structure of a random access transmission;

access burst is transmitted in the next available access slot as indicated by the timing information now included with this variant of the acknowledgement signal. This burst comprises a repeated preamble 64A and a message 68."

By use of the invention the available hardware resources are used efficiently,  
5 with minimum delays to call connection.

In addition, as disclosed in our co-pending application number (?) filed on even date, the AICH can be used to send a negative acknowledgement to the MS 12 if reception of the message 90 fails the CRC performed in the BTS 18.



# VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS

## PCT

### INTERNATIONALER RECHERCHENBERICHT

(Artikel 18 sowie Regeln 43 und 44 PCT)

Aktenzeichen des Anmelders oder Anwalts <b>D. BHATOOLAUL 7-</b>	<b>WEITERES VORGEHEN</b>	siehe Mitteilung über die Übermittlung des internationalen Recherchenberichts (Formblatt PCT/ISA/220) sowie, soweit zutreffend, nachstehender Punkt 5
Internationales Aktenzeichen <b>PCT/GB 99/ 04180</b>	Internationales Anmeldedatum (Tag/Monat/Jahr) <b>10/12/1999</b>	(Frühestes) Prioritätsdatum (Tag/Monat/Jahr) <b>18/03/1999</b>
Anmelder  <b>LUCENT TECHNOLOGIES INC. et al.</b>		

Dieser internationale Recherchenbericht wurde von der Internationalen Recherchenbehörde erstellt und wird dem Anmelder gemäß Artikel 18 übermittelt. Eine Kopie wird dem internationalen Büro übermittelt.

Dieser internationale Recherchenbericht umfaßt insgesamt 2 Blätter.



Darüber hinaus liegt ihm jeweils eine Kopie der in diesem Bericht genannten Unterlagen zum Stand der Technik bei.

**1. Grundlage des Berichts**

a. Hinsichtlich der Sprache ist die internationale Recherche auf der Grundlage der internationalen Anmeldung in der Sprache durchgeführt worden, in der sie eingereicht wurde, sofern unter diesem Punkt nichts anderes angegeben ist.



Die internationale Recherche ist auf der Grundlage einer bei der Behörde eingereichten Übersetzung der internationalen Anmeldung (Regel 23.1 b)) durchgeführt worden.

b. Hinsichtlich der in der internationalen Anmeldung offenbarten Nucleotid- und/oder Aminosäuresequenz ist die internationale Recherche auf der Grundlage des Sequenzprotokolls durchgeführt worden, das



in der internationalen Anmeldung in schriftlicher Form enthalten ist.



zusammen mit der internationalen Anmeldung in computerisierter Form eingereicht worden ist.



bei der Behörde nachträglich in schriftlicher Form eingereicht worden ist.



bei der Behörde nachträglich in computerisierter Form eingereicht worden ist.



Die Erklärung, daß das nachträglich eingereichte schriftliche Sequenzprotokoll nicht über den Offenbarungsgehalt der internationalen Anmeldung im Anmeldezeitpunkt hinausgeht, wurde vorgelegt.



Die Erklärung, daß die in computerisierter Form erfaßten Informationen dem schriftlichen Sequenzprotokoll entsprechen, wurde vorgelegt.

2.



Bestimmte Ansprüche haben sich als nicht recherchierbar erwiesen (siehe Feld I).

3.



Mangelnde Einheitlichkeit der Erfindung (siehe Feld II).

**4. Hinsichtlich der Bezeichnung der Erfindung**



wird der vom Anmelder eingereichte Wortlaut genehmigt.



wurde der Wortlaut von der Behörde wie folgt festgesetzt:

**5. Hinsichtlich der Zusammenfassung**



wird der vom Anmelder eingereichte Wortlaut genehmigt.



wurde der Wortlaut nach Regel 38.2b) in der in Feld III angegebenen Fassung von der Behörde festgesetzt. Der Anmelder kann der Behörde innerhalb eines Monats nach dem Datum der Absendung dieses internationalen Recherchenberichts eine Stellungnahme vorlegen.

6. Folgende Abbildung der Zeichnungen ist mit der Zusammenfassung zu veröffentlichen: Abb. Nr. 8



wie vom Anmelder vorgeschlagen



well der Anmelder selbst keine Abbildung vorgeschlagen hat.



well diese Abbildung die Erfindung besser kennzeichnet.



keine der Abb.

## INTERNATIONAL SEARCH REPORT

International Application No

P 99/04180

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 H04Q7/38 H04Q7/32

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 18280 A (ERICSSON TELEFON AB L M) 30 April 1998 (1998-04-30) page 1, line 29 -page 2, line 23 page 9, line 12 -page 10, line 14 ---	1-5
A	WO 97 46033 A (PHILIPS ELECTRONICS NV ;PHILIPS NORDEN AB (SE)) 4 December 1997 (1997-12-04) abstract -----	1-5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search

16 March 2000

Date of mailing of the international search report

23/03/2000

Name and mailing address of the ISA

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Fax: (+31-70) 340-3016

Authorized officer

Coppleters, S

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

GB 99/04180

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
W0 9818280	A	30-04-1998	AU 4732397 A	15-05-1998
			CN 1234169 A	03-11-1999
			EP 0932996 A	04-08-1999
W0 9746033	A	04-12-1997	AU 2574797 A	05-01-1998
			BR 9702253 A	17-02-1999
			CN 1198290 A	04-11-1998
			CZ 9800255 A	17-06-1998
			EP 0842589 A	20-05-1998
			JP 11510032 T	31-08-1999

PCT

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : H04Q 7/38, 7/32	A1	(11) International Publication Number: <b>WO 00/56107</b> (43) International Publication Date: 21 September 2000 (21.09.00)
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(21) International Application Number: PCT/GB99/04180

(22) International Filing Date: 10 December 1999 (10.12.99)

(30) Priority Data:  
9906198.8 18 March 1999 (18.03.99) GB

(71) Applicant (for all designated States except US): LUCENT TECHNOLOGIES INC. [US/US]; 600 Mountain Avenue, Murray Hill, NJ 07974-0636 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BHATOOLAUL, David, Lahiri [GB/GB]; 16 Ascham Road, Grange Park, Swindon, Wiltshire SN5 6BG (GB). LIM, Seau, Sian [SG/GB]; 17 Union Street, Swindon, Wiltshire SN1 3LD (GB). CAO, Qiang [CN/GB]; 33 Baxter Close, Abbey Meads, Swindon, Wiltshire SN2 3XL (GB).

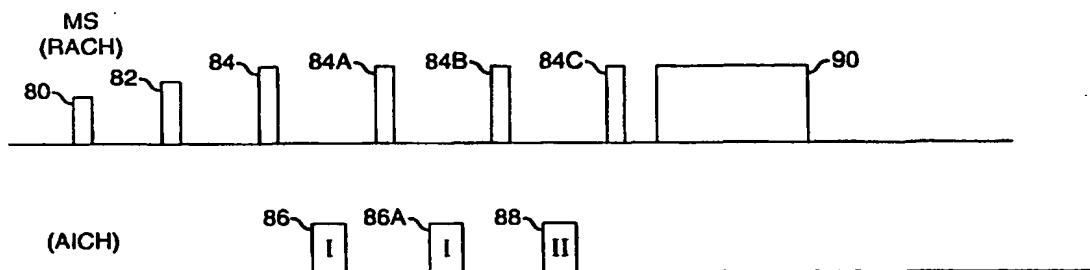
(74) Agents: WILLIAMS, David, J. et al.; Lucent Technologies UK Limited, 5 Morningside Road, Woodford Green, Essex IG8 0TU (GB).

(81) Designated States: AU, BR, CA, CN, ID, IN, JP, KR, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

With international search report.

(54) Title: IMPROVED MESSAGE ACCESS FOR RADIO TELECOMMUNICATIONS SYSTEM



(57) Abstract

In a UMTS, the AICH is arranged to send, in addition to a signal acknowledging that a preamble (84) from a mobile (12) is at an acceptable strength, an additional signal indicating that the mobile (12) is not currently permitted to send its message (90); this may apply when the BTS (18) does not have hardware resources available. If the BTS (18) can predict when the hardware will become available, the additional signal can include a time out (T) after which the mobile system (12) can send its message signal (90).

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# INTERNATIONAL SEARCH REPORT

Int. Application No.

PCT/GB 99/04180

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 H04Q7/38 H04Q7/32

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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X	WO 98 18280 A (ERICSSON TELEFON AB L M) 30 April 1998 (1998-04-30) page 1, line 29 -page 2, line 23 page 9, line 12 -page 10, line 14	1-5
A	WO 97 46033 A (PHILIPS ELECTRONICS NV ;PHILIPS NORDEN AB (SE)) 4 December 1997 (1997-12-04) abstract	1-5

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"Z" document member of the same patent family

Date of the actual completion of the international search

16 March 2000

Date of mailing of the international search report

23/03/2000

Name and mailing address of the ISA

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Authorized officer

Coppieters, S

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte Application No

PCT/GB 99/04180

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
W0 9818280 A	30-04-1998	AU 4732397 A	15-05-1998
		CN 1234169 A	03-11-1999
		EP 0932996 A	04-08-1999
W0 9746033 A	04-12-1997	AU 2574797 A	05-01-1998
		BR 9702253 A	17-02-1999
		CN 1198290 A	04-11-1998
		CZ 9800255 A	17-06-1998
		EP 0842589 A	20-05-1998
		JP 11510032 T	31-08-1999